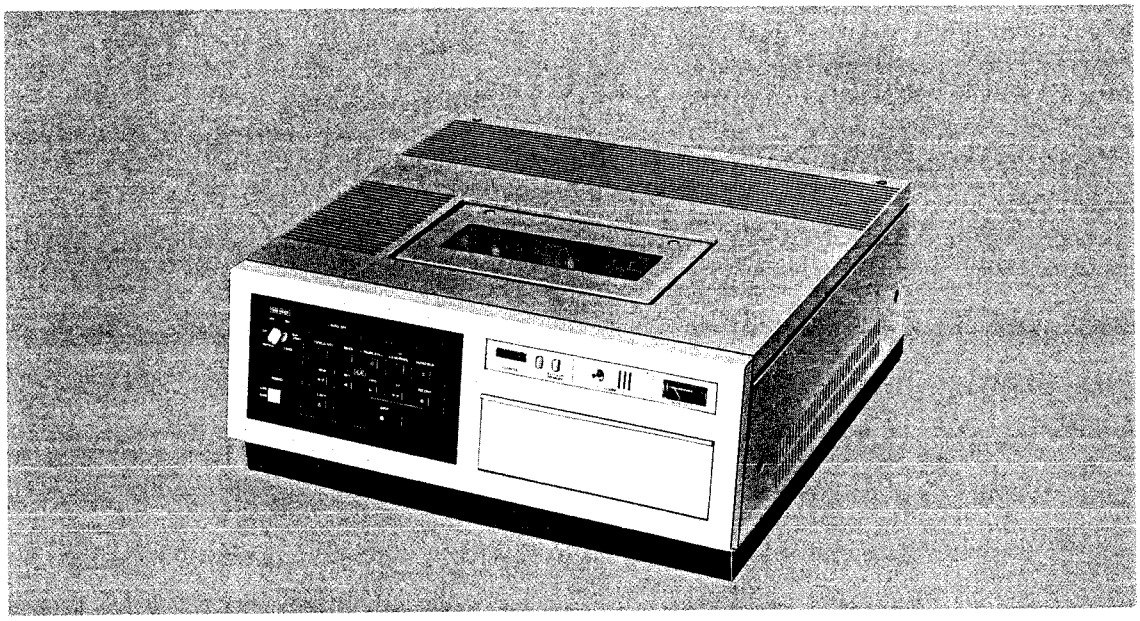
Operating Instructions

Time Lapse Recorder

NV-8051-E



Panasonic

Before attempting to connect, operate or adjust this product, please read these instructions completely.

ENGLISH

•This unit is designed exclusively for time lapse use.
The special recording system will not allow interchanging recorded programmes with a standard VHS unit.
Due to the application of a time lapse recorder we recommend that four hour tape is not used with machine.
•Cassette tapes recorded in this unit can be interchanged with NV-8050 Time Lapse Recorder, but not with AG-6010.

CAUTION:
This unit is exclusively designed for Black & White ONLY.

Before operating this VTR, make sure that the three (IEC standard R6 "AA") batteries are inserted in the time date generator box on the rear panel. Battery is used for power supply when the power failure has occurred.

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The NV-8051 has been precision-adjusted to yield the optimum picture quality with the recording and playback of CCIR system signals. Use of a 2:1 interlace sync camera is therefore recommended. Use of a camera not featuring 2:1 interlace sync for recording in the 12-, 24-, 48-, 72-, 120-, 144- and 240-hour of 1-shot modes may cause the pictures to be distorted.

FEATURES

1. **Recording and playback in a mode of 240-hours max. and in 1-shot mode**
   You can record and play back in 9 modes such as time lapse modes of 24, 48, 72, 120, 144, and 240 hours, and 1-shot mode besides 2- and 12-hour modes for audio recording.

2. **High resolution of 330 lines for good quality pictures**
   In video playback in monochrome mode, a high resolution of 330 lines can be obtained for good quality pictures, which is useful to make still pictures clearer.

3. **Selection of multi-function recording system**
   In accordance with the wide use such as monitoring and checking, you can select timer recording, auto repeat recording, series recording with multiple units, alarm recording, and 1-shot recording.

4. **Playback functions**
   You can quickly review the contents of the tape by using playback functions such as forward/reverse play at 2 times the normal speed, forward/reverse playback in all time modes, forward/reverse field advance, and auto alarm playback.

5. **Repeat recording**
   This unit is able to repeatedly record from tape beginning to tape end.

6. **Safety function**
   To ensure long-time continuous operation such as monitoring and checking, the unit is provided with safety functions such as recording monitor display to detect the abnormality, power failure reset switch to cope with power failure, and warning display to detect the trouble in the recorder.

7. **Time date generator**
   It is capable of supertimposing the date, time, time mode, alarm number and camera number which are necessary for monitoring and checking.

8. **System-up**
   Besides the video/audio input/output connectors, there are 8-pin connector used for connection to the monitor, camera switching connector necessary for connection to the sequential switcher, camera number connector, and 34-pin connector for connection of the remote control, which make system-up easier.

9. **Hour meter**
   With the built-in hour meter, you can check the state of the recorder. This is convenient for the maintenance.

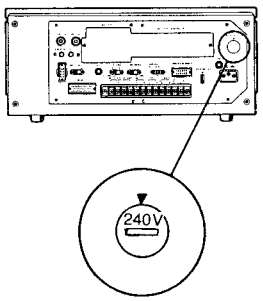
PRECAUTIONS

- Do not insert fingers or any other objects into the video cassette holder.
- Avoid operating or leaving the unit near strong magnetic fields. Be especially careful of large audio speakers.
- Avoid operating or storing the unit in an excessively hot, cold, or damp environment as this may result in damage both to the recorder and to the tape.
- If this unit is suddenly moved from a cold to a warm place, condensation may form inside. Therefore wait for at least 60 minutes before operating again. In this case leave the power turned ON.
- Do not block the ventilation slots on the top and bottom of the unit.
- Use this unit horizontally and do not place anything on the top panel.
- Cassette tape can be used only for one-side, one direction recording. Two-way or two-track recordings cannot be made.
- Cassette tape can only be used for Black & White recording with this unit.
- This unit is supplied with a 3-prong grounded AC plug—do not try to defeat its purpose.
- Do not spray any cleaner or wax directly on the unit.
- If the unit is not going to be used for a length of time, protect it from dirt and dust by using the protective cover.
- Do not leave a cassette in the recorder when not in use.
- Do not attempt to disassemble the recorder. There are no user serviceable parts inside.
- If any liquid spills inside the recorder, have the recorder examined for possible damage.
- Refer any needed servicing to qualified service personnel.

"Unauthorized recording of copyrighted television programmes, films, video tapes and other materials may infringe the right of copyright owners and be contrary to copyright laws."

FOR YOUR SAFETY

1. **THIS APPARATUS MUST BE EARTHED.**
   To ensure safe operation the three-pin plug supplied must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring. Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.
   The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of the power point, consult a qualified electrician.
2. **DO NOT REMOVE PANEL COVER BY UNSCREWING.**
   To prevent electric shock, do not remove cover. No user serviceable parts inside. And do not insert fingers or any other objects into the video cassette holder.
3. **VOLTAGE SELECTOR SETTING.**
   The power cord of this unit must be disconnected from mains before the voltage selector is changed.

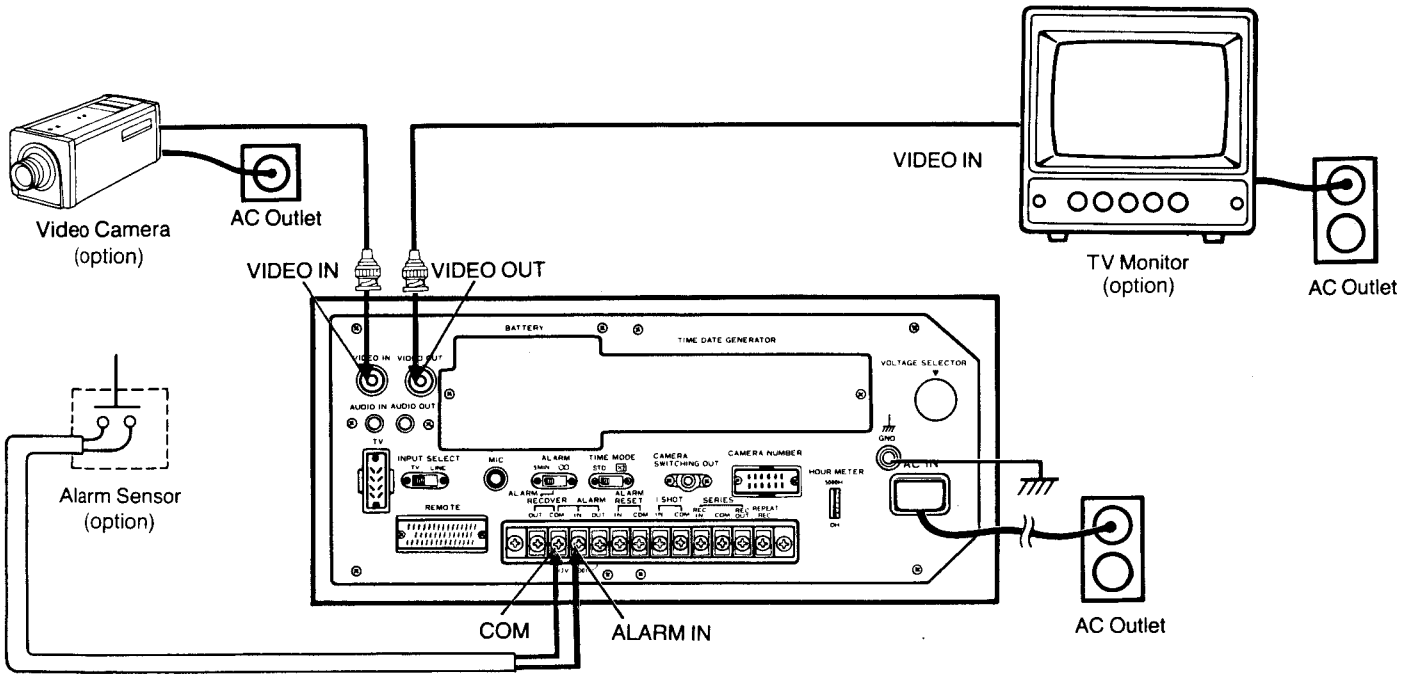


This unit can be used on either 110, 120, 220 or 240 V AC, and unit is preset to 220 V at the factory. Before connecting to the power supply, ensure that the selector on the rear panel is selected to the same voltage as your local power supply.
The voltage can be adjusted, if necessary, by using a screwdriver, but this adjustment should be made after disconnecting the power cord.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

INSTALLING THE TIME LAPSE VIDEO RECORDER

●CONNECTION WITH ONE CAMERA



Alarm Sensor: Door Switch, Foot Switch
Photoelectric Switch etc.

(1) Connect the time lapse video recorder's power cord to an AC outlet.

CAUTION
TO PREVENT ELECTRIC SHOCK HAZARD THE AC OUTLET MUST BE PROPERLY GROUNDED.

(2) Install the TV monitor.

(3) Connect the TV monitor to the time lapse video recorder using the 8-pin TV/VTR Monitor connection cable or a video cable. If necessary, terminate the TV monitor.

(4) Connect the TV monitor's power cord to an AC outlet.

(5) Install the video camera.

(6) Connect the video camera's video cable to the Video Input Connector on the time lapse video recorder.

(7) Switch on the video camera's power.

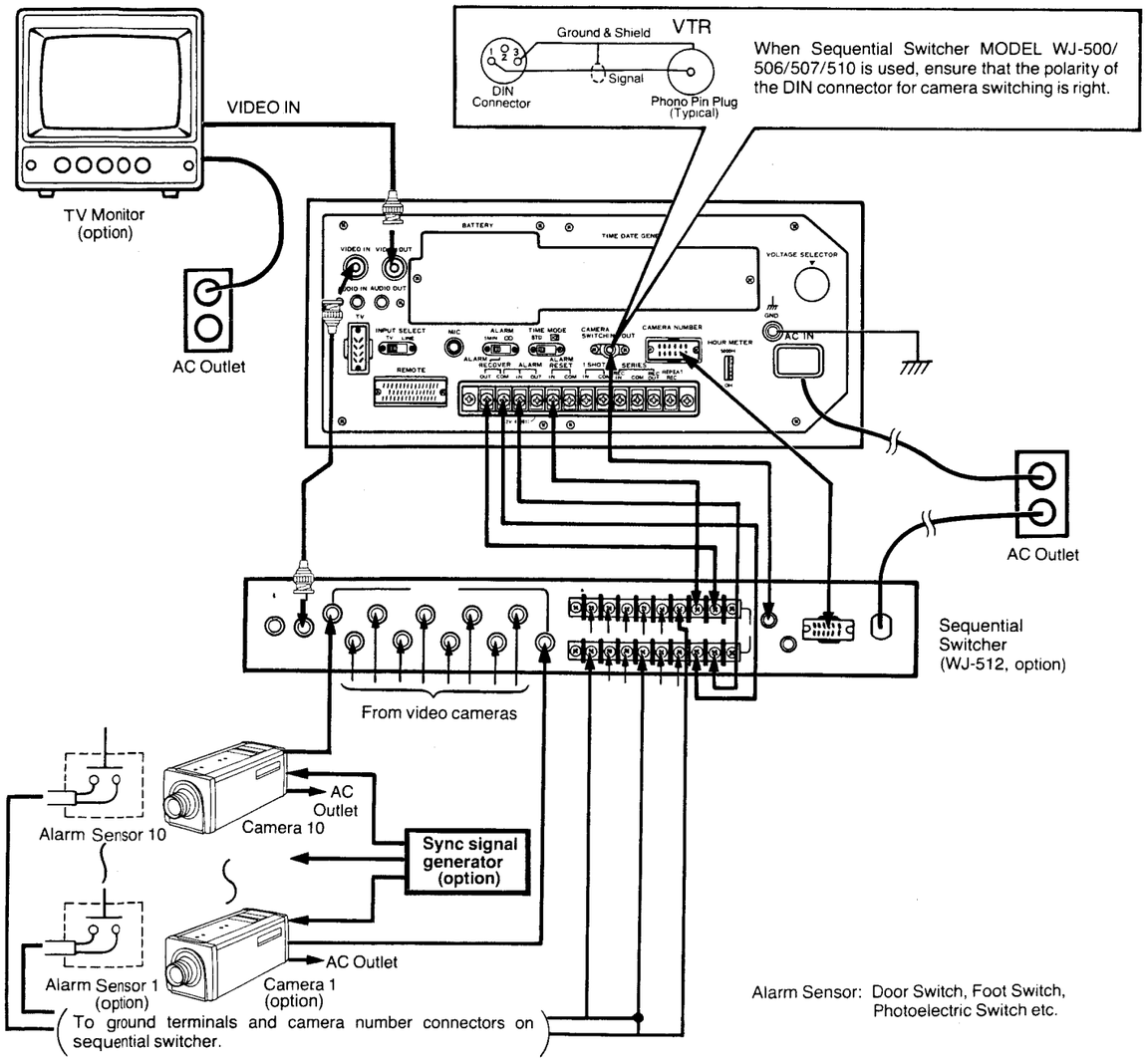
(8) Switch on the TV monitor's power.

(9) Adjust the TV monitor/video camera picture for best results.

(10) Connect the alarm sensor to the Alarm Signal Input Terminal and COM Terminal.

(11) Turn to page 14 for the recording procedure.

•USING A SEQUENTIAL SWITCHER



Alarm Sensor: Door Switch, Foot Switch, Photoelectric Switch etc.

(1) Connect the time lapse video recorder's power cord to an AC outlet.

CAUTION
TO PREVENT ELECTRIC SHOCK HAZARD THE AC OUTLET MUST BE PROPERLY GROUNDED.

(2) Install the TV monitor.

(3) Connect the TV monitor to the time lapse video recorder using the 8-pin TV/VTR Monitor connection cable or video cable. Remember to terminate the TV monitor if so required.

(4) Connect the monitor's power cord to an AC outlet.

(5) Install video cameras.

(6) Connect the video cables of the video cameras to the camera input on the sequential switcher.

(7) Connect the video output connector on the sequential switcher to the Video Input Connector on the time lapse video recorder using the video cable.

(8) Connect the VTR/IN connector on the sequential switcher to the Camera Switching Output Connector on the video recorder using the camera switching cable.

(9) Connect the Camera Number Connector on the video recorder to the sequential switcher's connector using the camera number cable.

Continued on next page.

ENGLISH

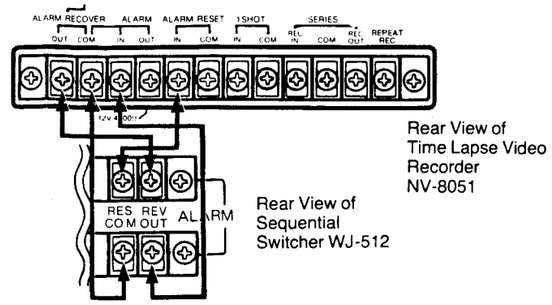
(10) Switch on the sequential switcher's power.

(11) Switch on the power to the video cameras.

(12) Switch on the TV monitor's power.

(13) Adjust the picture on the TV monitor/cameras optimally.

(14) Install the alarm sensors.
Connect the alarm sensors to the corresponding alarm number connectors and COM terminals on the sequential switcher.
Connect the sequential switcher and the time lapse video recorder as follows:


ALARM RECOVER
ALARM
ALARM RESET
1SHOT
SERIES
OUT COM IN OUT IN COM IN COM REC OUT REPEAT REC
12V 400mA
RES REV COM OUT ALARM
Rear View of Time Lapse Video Recorder NV-8051
Rear View of Sequential Switcher WJ-512

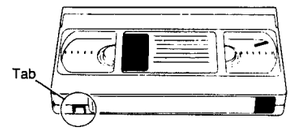
(15) Turn to page 14 for the recording procedure.

For details, refer to the operating instructions of sequential switcher.

A WORD ABOUT THE CASSETTE

THIS UNIT IS DESIGNED EXCLUSIVELY FOR TIME LAPSE USE.
THE SPECIAL RECORDING SYSTEM WILL NOT ALLOW INTERCHANGING RECORDED PROGRAMMES WITH A STANDARD VHS UNIT.
DUE TO THE APPLICATION OF A TIME LAPSE RECORDER WE RECOMMEND THAT FOUR HOUR TAPE IS NOT USED WITH MACHINE.

■ To prevent accidental erasure of recorded material, the VHS cassette has a removable tab on the rear side.



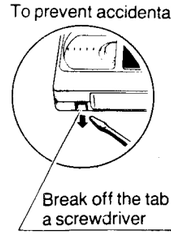
■ **Types of Cassette Tape**

Type	Playing Time
NV-E180*	3 Hrs.
NV-E120	2 Hrs.
NV-E60	1 Hr.

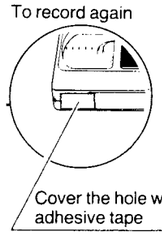
In addition to the tapes specified above, the recorder will accept any cassette tape which has the VHS mark.

*This unit is normally designed for NV-E180 tape use.

To prevent accidental erasure

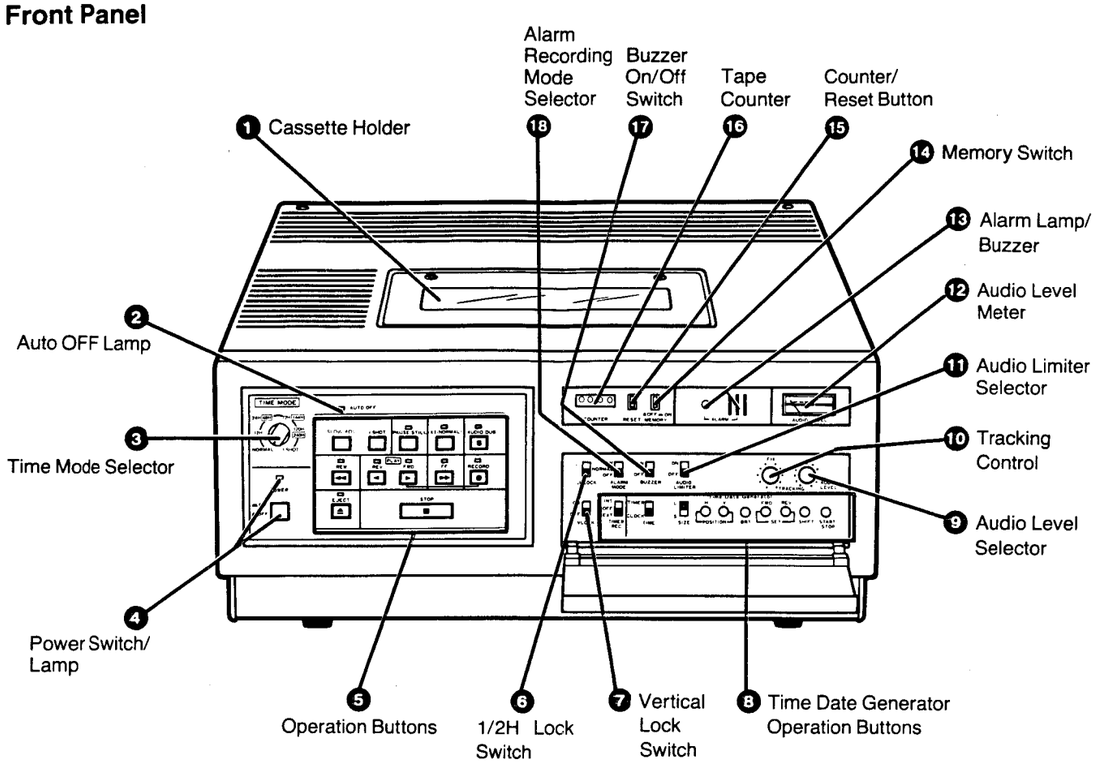


To record again

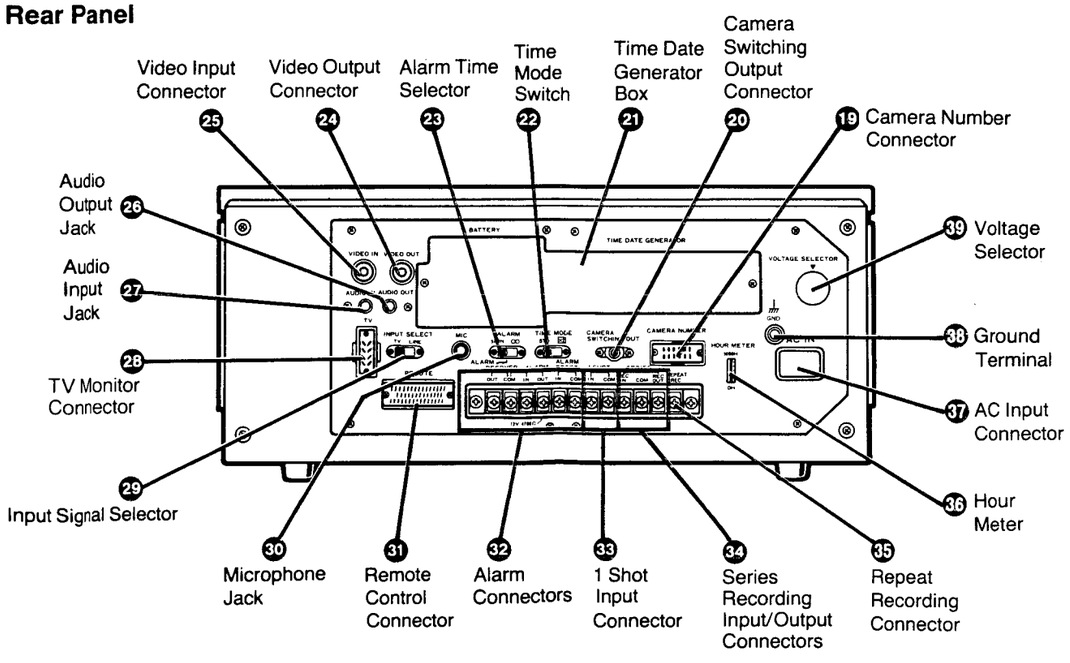


CONTROLS AND THEIR FUNCTIONS

Front Panel



Rear Panel



ENGLISH

1 Cassette Holder

2 Auto OFF Lamp
This lights when moisture has formed inside the unit. It blinks when there is something wrong with the cylinder motor or photo sensor. Turn to page 24 for details.

3 Time Mode Selector
Allows selection of 9 modes (NORMAL, 12-, 24-, 48-, 72-, 120-, 144-, 240-hour and 1-shot advance modes). Turn to page 13 for details.

4 Power Switch/Lamp
Power comes on when pressed and off when released.

5 Operation Buttons
Eject Button: Cassette holder 1 rises when pressed.
Record Button: Recording begins when Play Button is pressed together with this button.
Stop Button: Recorder stops when pressed.
Rewind Button: Used to rewind tape.
Play Button: Playback starts when pressed.
Fast Forward Button: Used to fast forward wind the tape.
Reverse Play Button: Reverse playback starts when pressed.

Note:
Reverse playback is released in about 5 minutes and normal playback is resumed when the Time Mode Selector 3 is set to the 24-, 48-, 72-, 120-, 144-, 240-hour mode position.

Audio Dubbing Button: Set the Time Mode Selector 3 to the NORMAL or 12H position. Sound recording starts when Play Button is pressed together with this button. Turn to page 23 for details.

Double Speed
Play Button: When pressed, the playback speed is doubled that of the normal playback regardless of the position of the Time Mode Selector 3. When the double speed playback is desired from pause mode, press ×2 (NORMAL) button but please note the pause mode will be released.

Pause/Still Button: Tape stops temporarily when pressed during recording. A still picture will appear on TV monitor when pressed during playback.
Press this button once again to release the tape from pause/still.

Note:
The unit is released from pause after 2.5 minutes in order to protect video heads and the tape.

1 Shot Button: When the Time Mode Selector 3 is set to the 1 SHOT position and this button is pressed for 1-shot recording, 8 fields are recorded. When it is pressed for still frame picture playback, the picture on the TV monitor advances one field in the forward (1) or reverse (2) direction regardless of the position of Time Mode Selector 3.

(1) When Play Button is pressed for 1-shot advance with the tape travelling in the forward direction.
(2) When the Reverse Play Button is pressed for 1-shot advance with the tape travelling in the reverse direction.

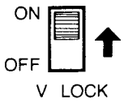
If noise interferes with the still picture on the TV monitor, use the Slow Advance Button.

Slow
Advance Button: When pressed and then hold, the TV monitor picture advances in the forward or reverse direction and the noise on the picture is eliminated.

6 1/2H Lock Switch

Used to cancel out distortion on the top part of the playback picture.
Turn this switch to the other direction; i.e. for instance from + position to − position.

7 Vertical Lock Switch



—Normally kept in the OFF position.
—Set to ON when the playback pictures start rolling down continuously.

8 Time Date Generator Operation Buttons
Used to display the date, month, year, hours, minutes, seconds, recording mode, camera number and number of alarms on the TV monitor picture.
For time/date generator operation, please read the details on pages 9–12.

9 Audio Level Selector

Used to adjust Audio Level Meter 12 so that the pointer is near 0 dB when the Audio Limiter Selector 11 has been set to OFF.

10 Tracking Control
This is normally kept in the FIX position. Active when the Time Mode Selector is in the NORMAL mode. Adjust this control by rotating it to the left or right if noise appears on the TV monitor pictures during tape playback. Return it to FIX position after playback.

11 Audio Limiter Selector

Manual adjustment is performed in the OFF position.
Adjust so that the Audio Level Meter 12 pointer deflects to around 0 dB using the Audio Level Selector 9.

This is normally kept in the ON position after manual adjustment has been completed.

12 Audio Level Meter

13 Alarm Lamp/Buzzer
Lamp lights when alarm signals are received during alarm recording (included rewind or fast forward), and the buzzer sounds if the Buzzer On/Off Switch 17 is set to ON.
Lamp blinks to indicate that the tape is at its end.
The lamp goes off when the Stop Button is pressed.

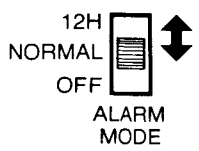
14 Memory Switch
When this is depressed and the Alarm Recording Mode Selector 18 set to the OFF position, the fast forward or rewound tape automatically stops when the Tape Counter indicates "0000". This is useful for viewing recorded pictures quickly.

⑮ Counter/Reset Button
When pressed, the Tape Counter is reset to "0000".

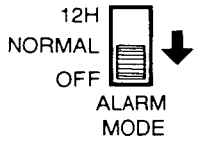
⑯ Tape Counter
This shows the relative position of the tape.

⑰ Buzzer On/Off Switch
Set to the ON position if it is desired that the alarm recording sounds the buzzer.
The buzzer sounds as soon as the alarm signals are received by emitting a continuous beep.
The buzzer sounds intermittently as soon as the tape reaches its end even during normal recording.
Set the switch to the OFF position to stop the buzzer.

⑱ Alarm Recording Mode Selector



For alarm recording, use this to select the recording mode, NORMAL or 12H.
During alarm mode playback, the alarm signal portion is automatically played back when the recorder is in the forward or rewind mode.



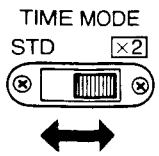
Set the selector to the OFF position if alarm recording is not required.
During playback, alarm mode playback is cancelled and the tape is advanced fast forward or rewound normally.

⑲ Camera Number Connector
Camera number input connector.

⑳ Camera Switching Output Connector
Camera switching time output connector: this feeds out a negative signal with a 12 V level and a 5.6 kΩ internal resistance to the sequential switcher. The pulse width is 2 msec. in the NORMAL mode and 30 msec. in the 12H mode. Refer to the table on page 13 for the pulse intervals.

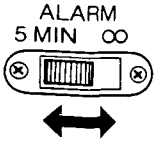
㉑ Time Date Generator Box
This accommodates the time date generator.

㉒ Time Mode Switch
This extends the time of recording or playback.



When the Time Mode Selector ❸ has been set to 24H [48H], 72H [144H], 120H [240H] and this switch ㉒ is set to "STD" position, the recording or playback time is 24H, 72H, 120H mode. And when this switch is set to [×2] position, the recording or playback time is doubled to 48-, 144- or 240-hour mode.

㉓ Alarm Time Selector
Check that the mode has been selected with the Alarm Recording Mode Selector ⑱.



The selector is used to set the alarm recording time to either approx. 5 minutes or tape end (∞).

㉔ Video Output Connector
BNC video output connector for connection to TV monitor.

㉕ Video Input Connector
BNC video input connector for connection to video camera.

㉖ Audio Output Jack
600-ohm impedance audio output phono-jack.

㉗ Audio Input Jack
100-kohm impedance audio input phono-jack.

㉘ TV Monitor Connector
Used for connection with TV monitor having a video connector using the 8-pin TV/VTR Monitor connection cable (accessory included).

㉙ Input Signal Selector
Used to select the input signal.
TV: For receiving the input signal from the TV Monitor Connector ㉘
LINE: For receiving the input signal from the Video Input Connector ㉕ and Audio Input Jack ㉗.

㉚ Microphone Jack
600-ohm impedance microphone input jack.

㉛ Remote Control Connector
Used for connecting to the NV-A810 remote controller or the NV-A800A auto search controller.

㉜ Alarm Connectors
●ALARM RECOVER OUTPUT:
This feeds out a 5 V voltage during alarm recording.
It is connected when the alarm signal is to be supplied to an externally connected equipment.
●ALARM SIGNAL INPUT:
This is connected to the alarm sensor which informs the operator when there is an alarm.
●ALARM SIGNAL OUTPUT:
This is for relaying the alarm signal externally.
●ALARM RESET INPUT:
This is for inhibiting the alarm recording.

㉝ 1 Shot Input Connector
This is used when operating 1 shot advance recording by remote control and is connected to the remote control switch.

㉞ Series Recording Input/Output Connectors
●SERIES RECORDING INPUT TERMINAL:
Used for series operation and connected to the Series Recording Output Terminal of another time lapse video recorder.
●SERIES RECORDING OUTPUT TERMINAL:
Used for series operation with two or more time lapse video recorders and connected to the Series Recording Input Terminal of another time lapse video recorder.

㉟ Repeat Recording Connector
Used for recording repeatedly from tape beginning to tape end.

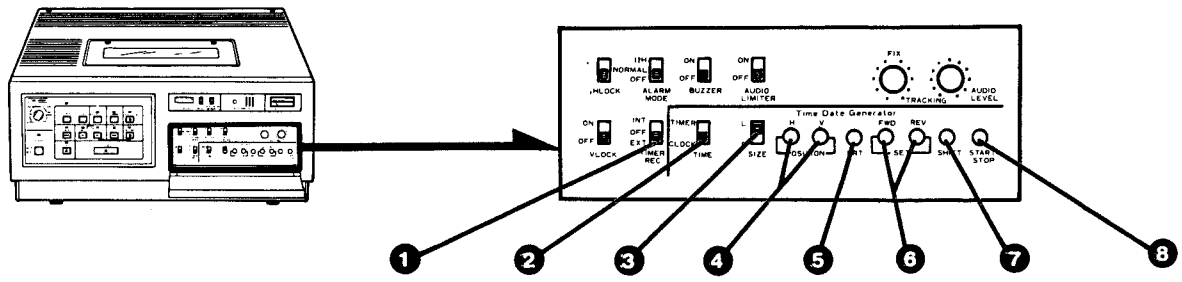
㊱ Hour Meter
This indicates the time the video has been used (max. 5,000 hours) and is useful for servicing, maintenance and inspection. It operates when the Power Switch is ON. Keep Power Switch OFF when not using the recorder.

㊲ AC Input Connector
This is used for supplying the AC power and is connected to an AC outlet using the accessory power cord.

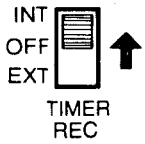
㊳ Ground Terminal

㊴ Voltage Selector
This selector can be set for 110, 120, 220, 240 Volt operation.
If it is necessary to change the voltage (preset to 240 V at the factory), consult page 2.

TIME DATE GENERATOR
•COMPONENTS AND FUNCTIONS

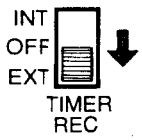


❶ Timer Rec Switch



This is normally kept in the OFF position.

—When recording with the time date generator's built-in timer, set the Timer Rec Switch to INT.



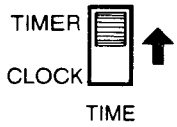
—When recording with an external timer, set the Timer Rec Switch to EXT.

Note:
When the external timer is not used, set the Timer Rec Switch to the OFF position in order to avoid misoperation.

Turn to page 19 for details.

❷ Time Switch

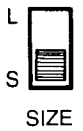
This is normally kept at the CLOCK position.



—When setting the recording start time using the time date generator's built-in timer, set the switch to TIMER.

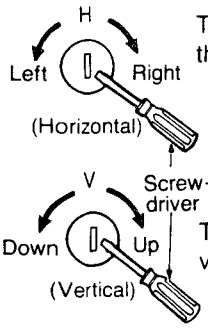
Turn to page 19 for details.

❸ Size Selector



This selects the size of the display (L: large; S: small).

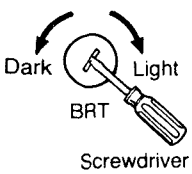
❹ Position Adjusting Pots



These move the position of the display on the TV monitor.

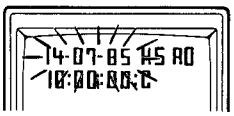
The display can be moved horizontally and vertically.

❺ Brightness Adjusting Pot

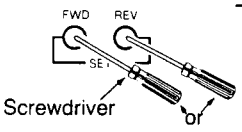


Use this to adjust the brightness of the display on the TV monitor.

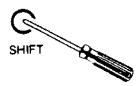
❻ Forward/Reverse Buttons



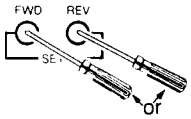
These are used to extinguish or change the display blinking. Check the display blinking on the TV monitor.



—To extinguish the display:
When pressed, the "--" or "---" display blinks.
When pressed once again, the letter blinks.



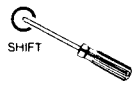
—To change the display:
Press the Shift Button until the date, month, year or hour, minute display blinks independently.



When pressed, the display blinking will change.

❼ Shift Button

The display blinks when the Start/Stop Button is depressed.



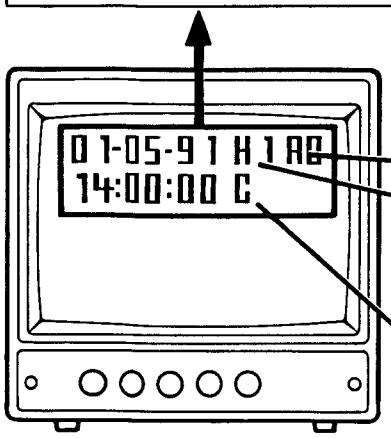
When the Shift Button is depressed, the display blinking on the TV monitor shifts.

❽ Start/Stop Button

When the Start/Stop Button is depressed, the display blinks and the location to be changed is indicated. When it is depressed again, the time display starts.

●TIME, DATE AND DATA SETTINGS

Date-Month-Year Recording Mode Alarm Number
Hour:Minute:Second Camera Number



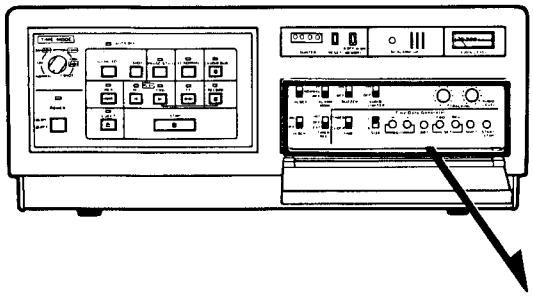
●Switch on the time lapse video recorder's power.
The display now appears on the TV monitor but it is not accurate.

Number of times that the alarm signal has been received. (up to 9 times).

Recording mode

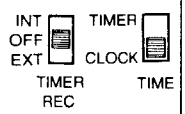
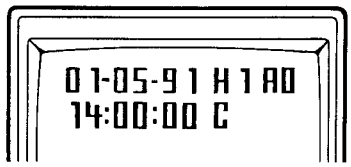
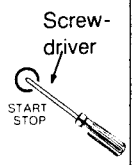
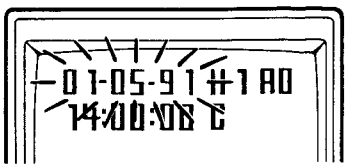
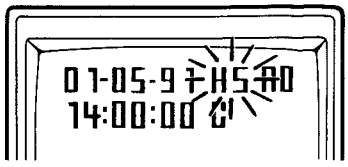
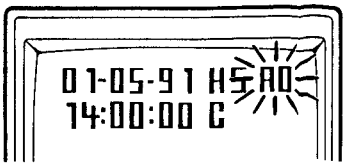
Display	H1	H2	H3	H4	H5	H6
Time Mode Selector	NORMAL	12H	24H or 48H	72H or 144H	120H or 240H	1 SHOT

Recording camera number

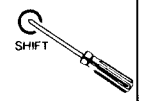
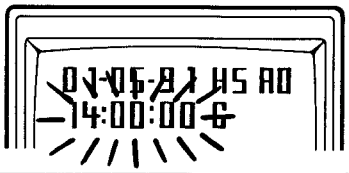
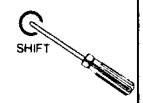
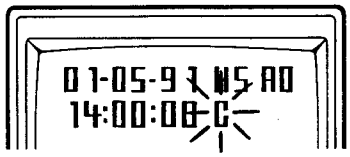
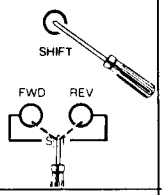
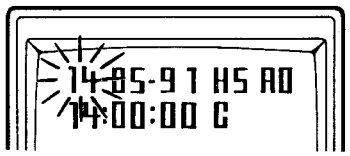
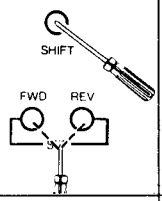
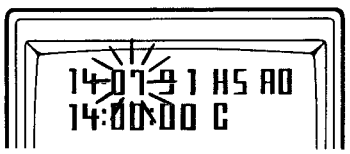
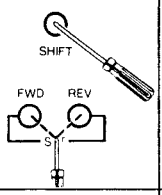
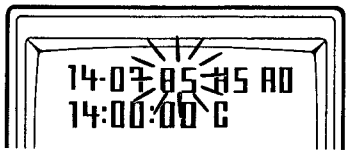
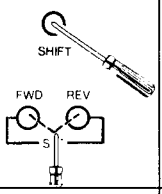
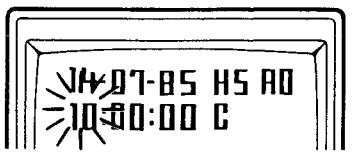
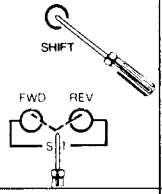
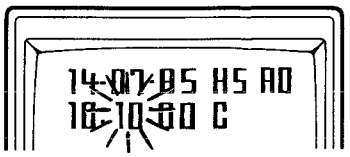
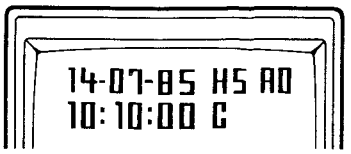


●Select the recording mode with the Time Mode Selector.
●There is no need to set the alarm or camera number.
●The time is indicated on a 24-hour basis.

Procedure for setting 10:10 a.m., July 14 1985 (in 120H recording mode)

Step	Operation		Display on TV monitor
1		Set the Timer Rec Switch to OFF and the Time Switch to CLOCK.	
2		The date-month-year display blinks when the Start/Stop Switch is pressed.	
3		The recording mode blinks when the Shift Button is pressed. Set the Time Mode Selector to 120H and the Time Mode Switch ㉒ to STD (for 240H, set the rear panel Time Mode Switch ㉒ to ×2).	
4		The alarm number blinks when the Shift Button is pressed.	

ENGLISH

Step	Operation		Display on TV monitor
5		The hour-minute-second display blinks when the Shift Button is pressed.	
6		The camera number blinks when the Shift Button is pressed.	
7		The date display blinks when the Shift Button is pressed. Press the Forward or Reverse Button until "14" is displayed.	
8		The month display blinks when the Shift Button is pressed. Press the Forward or Reverse Button until "07" is displayed.	
9		The year display blinks when the Shift Button is pressed. Press the Forward or Reverse Button until "85" is displayed.	
10		The hour display blinks when the Shift Button is pressed. Press the Forward or Reverse Button until "10" is displayed.	
11		The minute display blinks when the Shift Button is pressed. Press the Forward or Reverse Button until "10" is displayed.	
12		Press the Start/Stop Button as soon as it is "10:10". The time indication now starts to change.	

When you want to cancel the display

Press the Forward or Reverse Buttons in the STEPS 2–6. The blinking display will be changed to "- -" or "- - -", and the appropriate display will be cancelled.

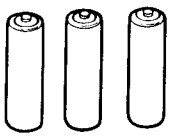
If the Forward or Reverse Button is pressed once again, "- -" or "- - -" display will be changed into letter blinking.

When the power is turned OFF, or power failure happens, cancelled letters will be appeared on the TV monitor after the power is restored.

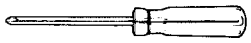
•REPLACING THE BATTERIES

The time date generator is designed to be fitted into the NV-8051 time lapse VTR.
It is used to indicate not only the date, month, year, hours, minutes and seconds but also the recording mode, camera number and number of alarms on the TV monitor screen.
The NV-8051 will not function if there is a power failure or if the power switch is turned off. The batteries serve to keep the time date generator's time and date in such cases, **but the data memory (i.e. memory for timer recording) is lost when power failure occurs.**

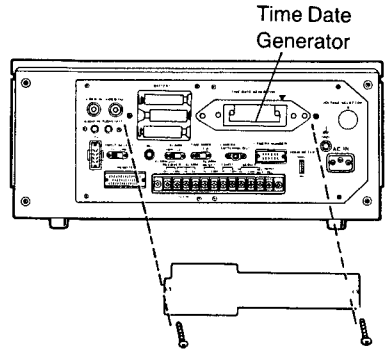
Provide the following:



Three UM-3 (size IEC standard R6 "AA") dry batteries.

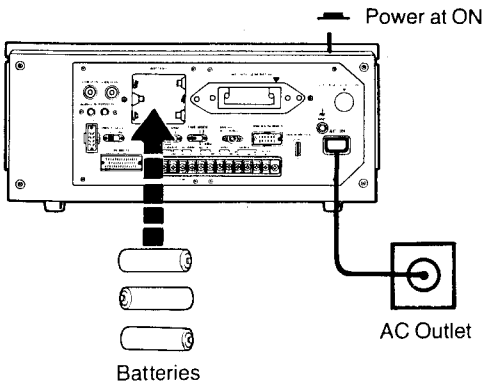


Phillips Head Screwdriver

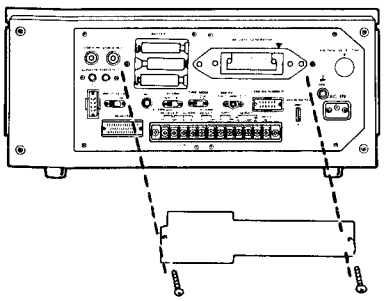


Before replacing the batteries, check the POWER Switch is placed in the "ON" position.

1. Remove the rear cover plate from the NV-8051.



2. Exchange the three UM-3 (IEC standard R6 "AA") batteries to new ones as shown, observing polarity.

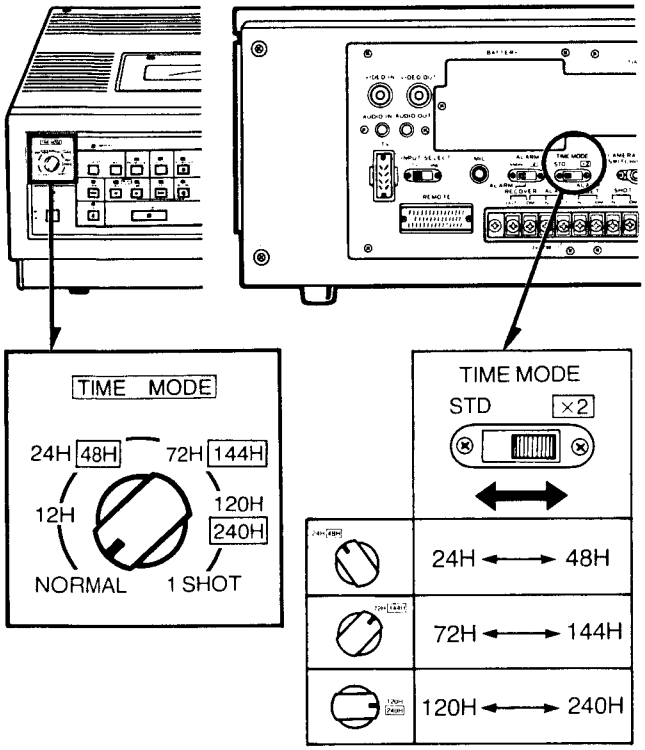


3. Re-install the two screws which secure the unit, tightening them firmly, and re-install the cover plate.

- •The guarantee period against battery power failure is 1 year.
- •Use three UM-3 (IEC standard R6 "AA") dry batteries.
- •**Replace the batteries** with new units once a year, remembering to switch the TIME LAPSE RECORDER'S POWER ON.
- •Do not mix spent batteries with fresh batteries.
- •Do not mix manganese batteries with alkaline batteries.

ESSENTIALS OF TIME LAPSE

Check the following basic operations before proceeding with time lapse recording or playback.



When Time Mode Selector ❸ is set to NORMAL, 12H or 1 SHOT mode, it is not necessary to set Time Mode Switch ㉒ on the rear panel.

Time Mode Selector

Use this to select the mode in line with the intended application, referring to the table below. (NV-E180 tape is the standard type for this unit.)

Mode	Possible Record time NV-E180 tape	Video Record intervals (sec)	Audio Record Quality	Camera* selector interval (sec.)
NORMAL	3 hours	1/50	Excellent	5/6
12H	12 hours	2/25	Good	1
24H	24 hours	4/25	Unusable	1-1/3
48H	48 hours	8/25	Unusable	1-2/3
72H	72 hours	12/25	Unusable	2.0
120H	120 hours	4/5	Unusable	3-1/3
144H	144 hours	24/25	Unusable	4.0
240H	240 hours	8/5	Unusable	6-2/3
1 SHOT	2,932 hours max.	1 block, over 7 sec. & under 2 min. 30 sec. (Manual)	Unusable	3-1/3
		2 min. 37 sec. (Auto)		

*Camera selector interval is the camera switching time one video camera to another video camera **by using the sequential switcher**.

Caution:

Make certain that the Time Mode Selector ❸ is set to the display position. For example, when set to a position between NORMAL and 12H, trouble may result.

—The possible recording times available with the various types of video cassettes are given below.

Mode	Possible recording time (hours)			Fields per sec.
	NV-E180	NV-E120	NV-E60	
NORMAL	3	2	1	50
12H	12	8	4	12.5
24H	24	16	8	6.25
48H	48	32	16	3.125
72H	72	48	24	2.09
120H	120	80	40	1.25
144H	144	96	48	1.1
240H	240	160	80	0.63

—Quick motion

This refers to recording in the 12H, 24H, 48H, 72H, 120H, 144H, 240H or 1 SHOT mode and playing back the recording in the NORMAL mode.

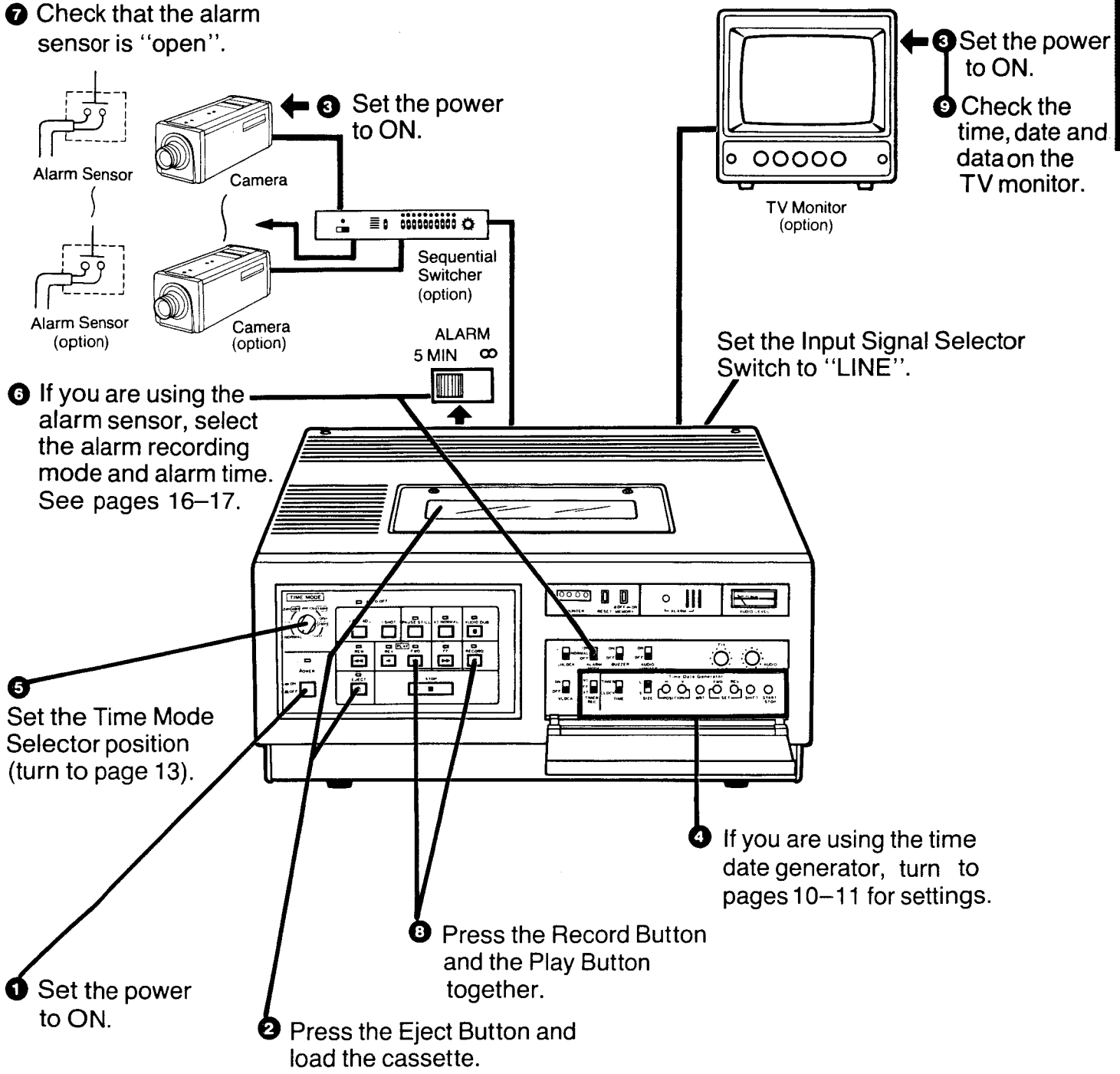
Any noise appearing during playback can be adjusted with the Tracking Control. For details, see page 22.

—Slow motion

This refers to recording in the NORMAL mode and playing back the recording in the 12H, 24H, 48H, 72H, 120H, 144H or 240H mode, giving reduced speed ratios of 1/4, 1/8, 1/16, 1/24, 1/40, 1/48 and 1/80, respectively.

RECORDING

Replace the protective cover during recording in order to avoid incorrect operation.


❼ Check that the alarm sensor is "open".
Alarm Sensor
Alarm Sensor (option)
Camera
Camera (option)
❸ Set the power to ON.
Sequential Switcher (option)
ALARM
5 MIN ∞
❻ If you are using the alarm sensor, select the alarm recording mode and alarm time. See pages 16–17.
TV Monitor (option)
❸ Set the power to ON.
❾ Check the time, date and data on the TV monitor.
Set the Input Signal Selector Switch to "LINE".
❺ Set the Time Mode Selector position (turn to page 13).
❹ If you are using the time date generator, turn to pages 10–11 for settings.
❽ Press the Record Button and the Play Button together.
❶ Set the power to ON.
❷ Press the Eject Button and load the cassette.

Using the Pause Button

1. Press the Play Button and find the recording position.
2. Press the Pause Button.
3. Press the Record Button.
4. Press the Pause Button to release the pause function.
5. Recording now starts.

To stop the recording:
Press the unit's Stop Button.

Power Failure Note:
Power failure during record mode will result in a return to the STOP mode. To prevent this, place TIMER REC switch in the EXT position.

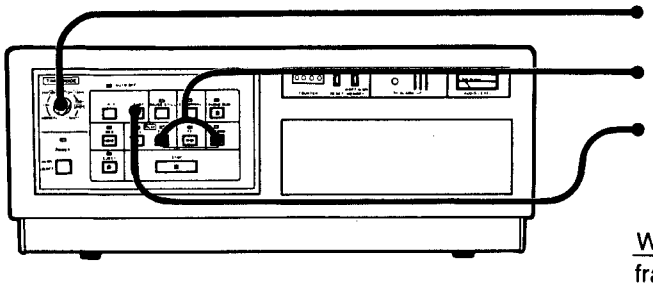
Using the timer recording function

—There is no need to press the Record and Play Buttons.
—Switch off the TV monitor's power once the recording preparations have been completed.
—Leave the power switch ON.

Stopping built-in timer recording
Press the Stop Button.
(Press the STOP button only when 1 minute goes by after the recording has been started.)

When the recorder is in the STOP or PAUSE modes, the camera switching pulses are not fed from the recorder.

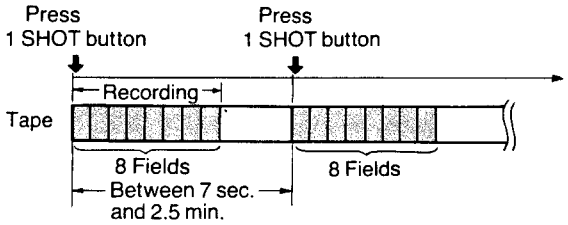
1 SHOT RECORDING



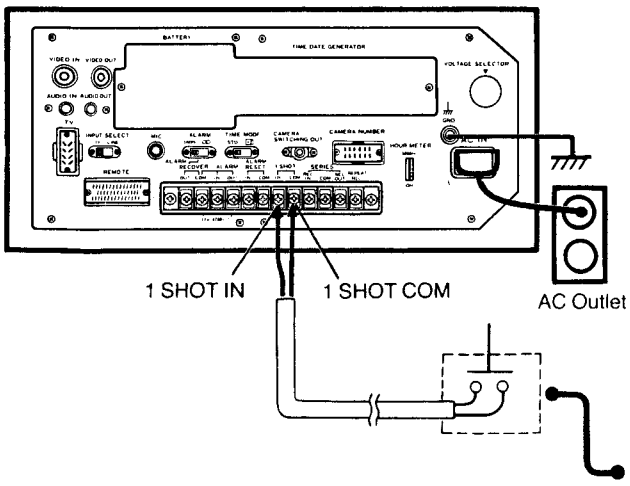
—Basic Procedure for 1 Shot Recording

1. Set the TIME MODE SELECTOR to the 1 SHOT position.
2. Press the RECORD and PLAY Buttons together.
3. Press the 1 SHOT Button.
   Recording is possible in the 120-hour mode if this 1 Shot Button is pressed continuously.

When the 1 Shot Button is pressed once: The tape advances 8 fields (4 frames).

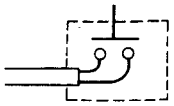


Caution:
- When switching between cameras, two cameras record four fields each.



—To perform 1 shot recording using the remote control switch, provide the following:

Phillips Head
Screwdriver



Remote Control

Connect the remote control unit to the rear panel 1 Shot Input Terminal and the Com Terminal.

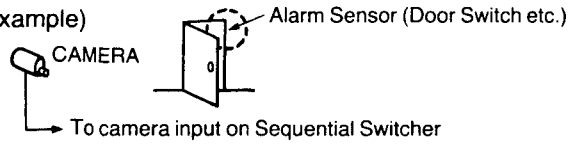
1. Carry out steps 1 and 2 in the basic procedure for 1-shot recording.
2. Operate with the ON/OFF SWITCH of the remote control unit.
   1-shot tape advance results from shorting the 1 Shot Signal Input Signal. The shorting interval is within 6.4 sec. for recording.

Caution:
When the 1 shot recording interval reaches 2.5 minutes, the tape will automatically advance in order to protect the video heads.

ALARM RECORDING

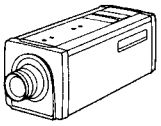
The alarm function is automatically activated when the sensor responds at the monitoring location during prolonged recording. The recording speed increases and the incident is faithfully recorded.

(Example)

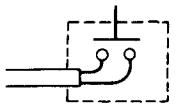


The figure below shows a general outline of the alarm recording (with the Alarm Time Selector at 5 min.)

Provide the following:

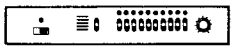


Video Camera

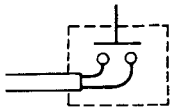


Alarm Sensor

When using two or more video cameras for monitoring:

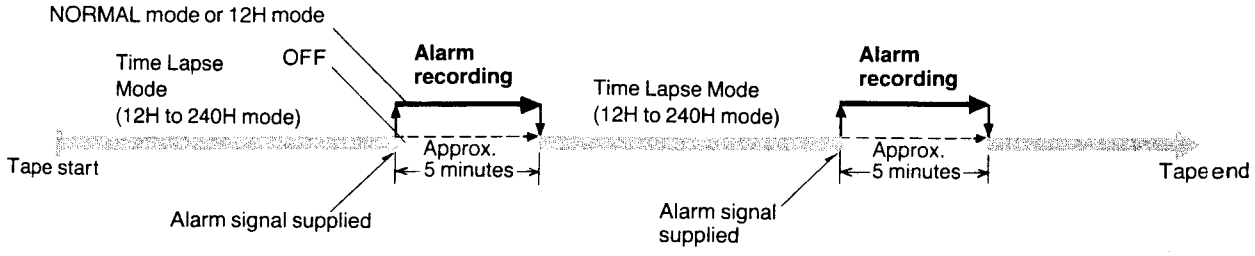


Sequential Switcher

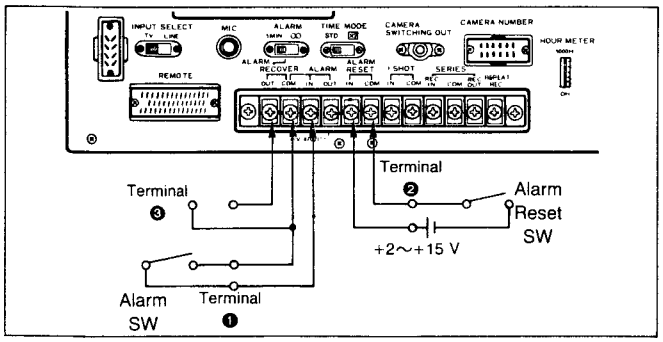


Alarm sensors corresponding to cameras

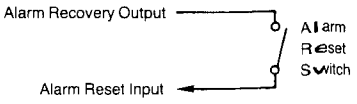
For connections, turn to pages 3–5.



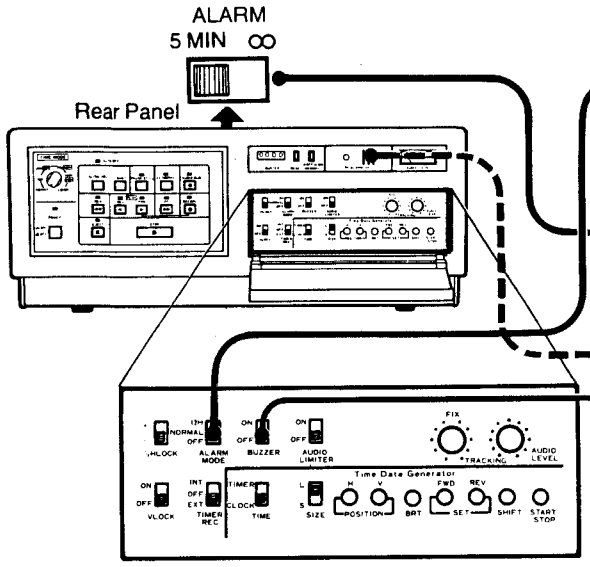
Alarm Terminal Connections



Alarm Signal Input: Contact closure for alarm
Alarm Reset Input: +2~+15 V (min. current +2 mA)
Alarm Recovery Output: +5 V, 220 ohms

Connection	Function	Remarks
Alarm Switch is connected to terminal ❶ only.	With Alarm Switch ON, recording continues for about 5 min. or tape end (∞) in NORMAL or 12H mode and is automatically reset to the original time lapse mode as shown above.	When the Alarm Switch is turned ON again during alarm recording operation, recording will continue for about 5 min. or tape end from that moment.
Alarm Switch is connected to terminal ❶ and Alarm Reset Switch to terminal ❷.	With Alarm Switch "ON", recording is done in NORMAL or 12H mode. But it can be reset to time lapse mode by setting the Alarm Reset Switch "ON".	Alarm Reset in time can be set to 5 min. or tape end (∞). Alarm Recovery Output can also be used for alarm reset input signal. For example: 
Terminals ❶, ❷ and ❸ are connected to sequential switcher (WJ-512).	Camera with Alarm Switch triggered is selected from among multiple cameras, and alarm recording is performed. After that, automatic recording with multiple cameras will be resumed.	Note that automatic recording with multiple cameras will not be resumed if terminal ❸ is not connected to Sequential Switcher. For details, refer to the operating instructions of the Sequential Switcher.

Check the following basic operations before proceeding with alarm recording.



—Select the recording speed.

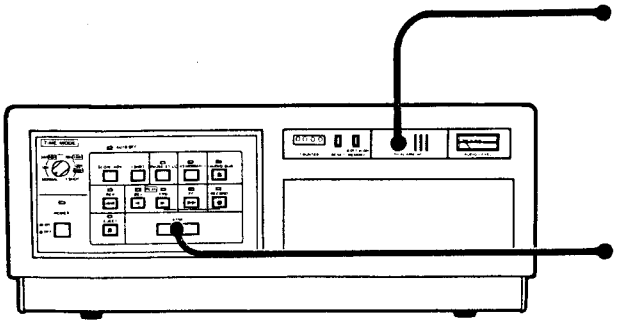
Set the ALARM RECORDING MODE SELECTOR to the NORMAL or 12H position.

—Set the recording time.

Set the ALARM TIME SELECTOR to the 5 MIN or ∞ (up to tape end) position.

To have the buzzer sound the alarm input:

Set the ALARM ON/OFF BUZZER SWITCH to ON.



When the alarm signal is being recorded, the Alarm Lamp lights.

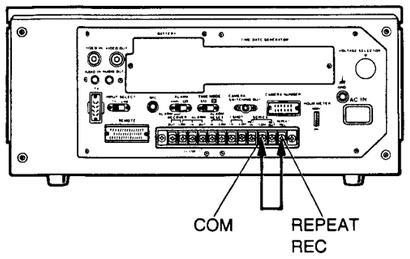
When recording is continued until the tape end, the Alarm Lamp stays lit but the recorder shuts down.

Press the STOP Button to extinguish the Alarm Lamp.

When a separate alarm signal enters during alarm recording, it is ignored until the end of the recording time.

Note:
The reception of the alarm signal takes precedence over the lamp blinking at the end of the tape. This means that when an alarm signal has been received, the Alarm Lamp stays lit even if the tape is at the end.

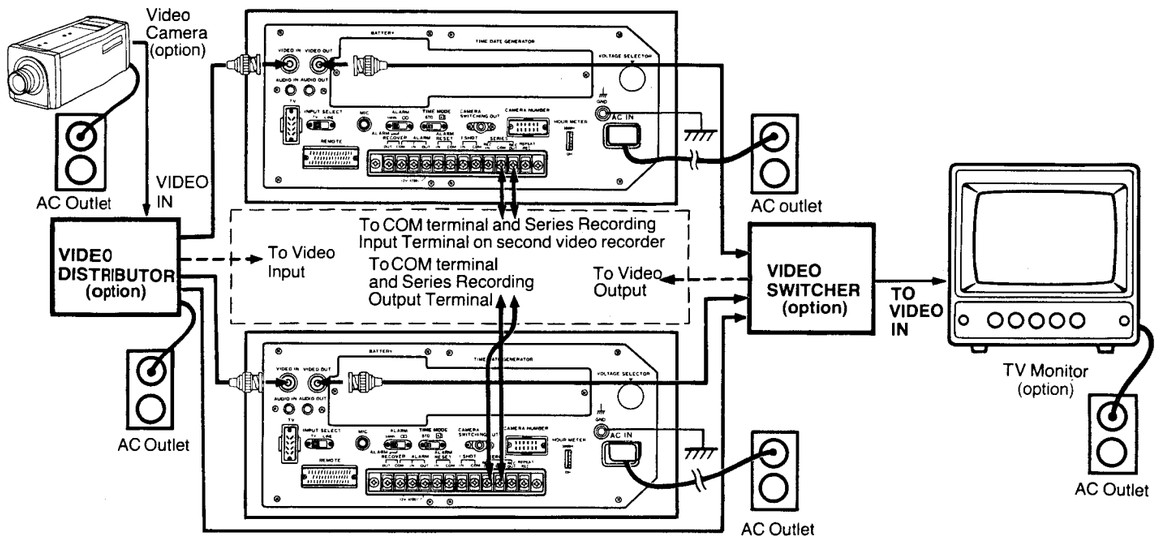
REPEAT RECORDING



1. Short circuit the REPEAT REC Connector and COM Terminal as shown.
2. Press the RECORD and PLAY Buttons on the front panel together. Repeat recording will start between tape beginning and tape end.
3. Press the STOP Button to stop the repeat recording.

Notes:
- If, during repeat recording, short circuit wiring has been removed from Repeat Recording Connector, VTR will stop at the tape end and repeat recording cannot be performed.
- During auto rewind mode, alarm lamp blinks to indicate the repeat recording (REW lamp lights during normal REW mode).
- During auto rewind mode, press the STOP Button to stop the repeat recording. This unit will then go into the stop mode.
- Place the protective cover to avoid the mis-operation during repeat recording.

●SERIES OPERATION CONNECTIONS



(1) Install the desired number of time lapse video recorders.

(2) Connect the COM terminals and Series Recording Input and Output Terminals on the time lapse video recorder.

(3) Connect the power cords of the time lapse video recorders to the AC power outlets.

CAUTION
TO PREVENT ELECTRIC SHOCK HAZARD THE AC OUTLET MUST BE PROPERLY GROUNDED.

(4) Install the TV monitor.

(5) Connect the TV monitor's power cord to the AC outlet.

(6) Install the video camera.

(7) Install the video distributor.

(8) Connect the video camera's video cable to the input connector on the video distributor.

(9) Connect the output connectors on the video distributor and the Video Input Connectors on the time lapse video recorders using the video cables.

(10) Install the video switcher.

(11) Connect the Video Output Connectors on the time lapse video recorders to the input connectors on the video switcher using the video calbes.

(12) Connect the video switcher to the TV monitor using the video cable.

(13) Switch on the power of the time lapse video recorders.

(14) Switch on the video camera's power.

(15) Switch on the TV monitor's power.

(16) Adjust the picture on the TV monitor/camera for best results.

(17) Turn to page 14 for the recording procedure to be carried out with the first time lapse video recorder.

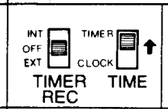
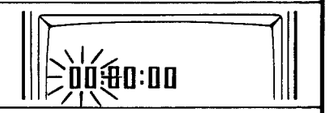
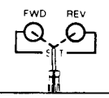
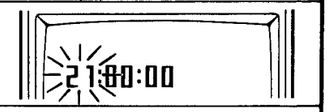
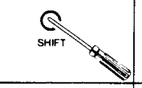
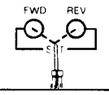
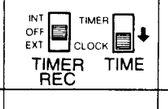
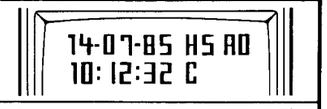
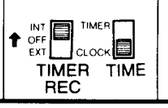
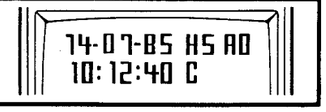
ENGLISH

●TIMER RECORDING

The timer recording function is used to start the time lapse video recorder functioning automatically. PRESS THE STOP BUTTON TO STOP THE RECORDING.

For instance, let us assume that timer recording is to start at 21:30. Check that the present time is correct. Refer to pages 10–11 for the adjustment procedure.

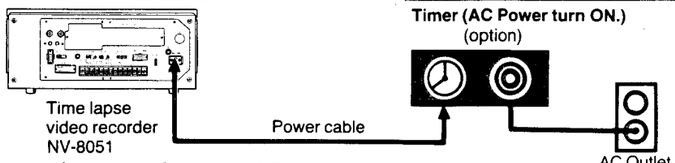
—Recording with the built-in timer

Step	Operation		Display on TV monitor
1		Set the Time Switch to TIMER. The hour display now blinks.	
2		Press the Forward or Reverse Button until "21" is displayed.	
3		The minute display blinks when the Shift Button is pressed.	
4		Press the Forward or Reverse Button until "30" is displayed.	
5		The time and date appears on the TV monitor when the Time Switch is set to CLOCK.	
6		Set the Timer Rec Switch to INT.	

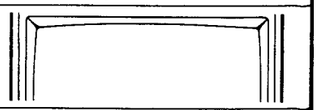
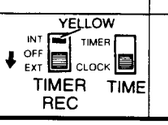
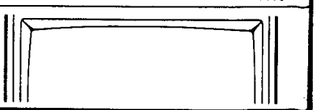
This now completes the timer operations. Turn to page 14 for the recording procedure. Recording will start at 21:30.

Be sure that the power is turned ON. If the power is turned OFF or power failure happens, the programmed time is erased. In this case, reset the timer.

—Recording with an external timer



—Connect the timer's power plug to an AC outlet. AC Power turns ON.
—Connect the time lapse video recorder's power plug to the timer.

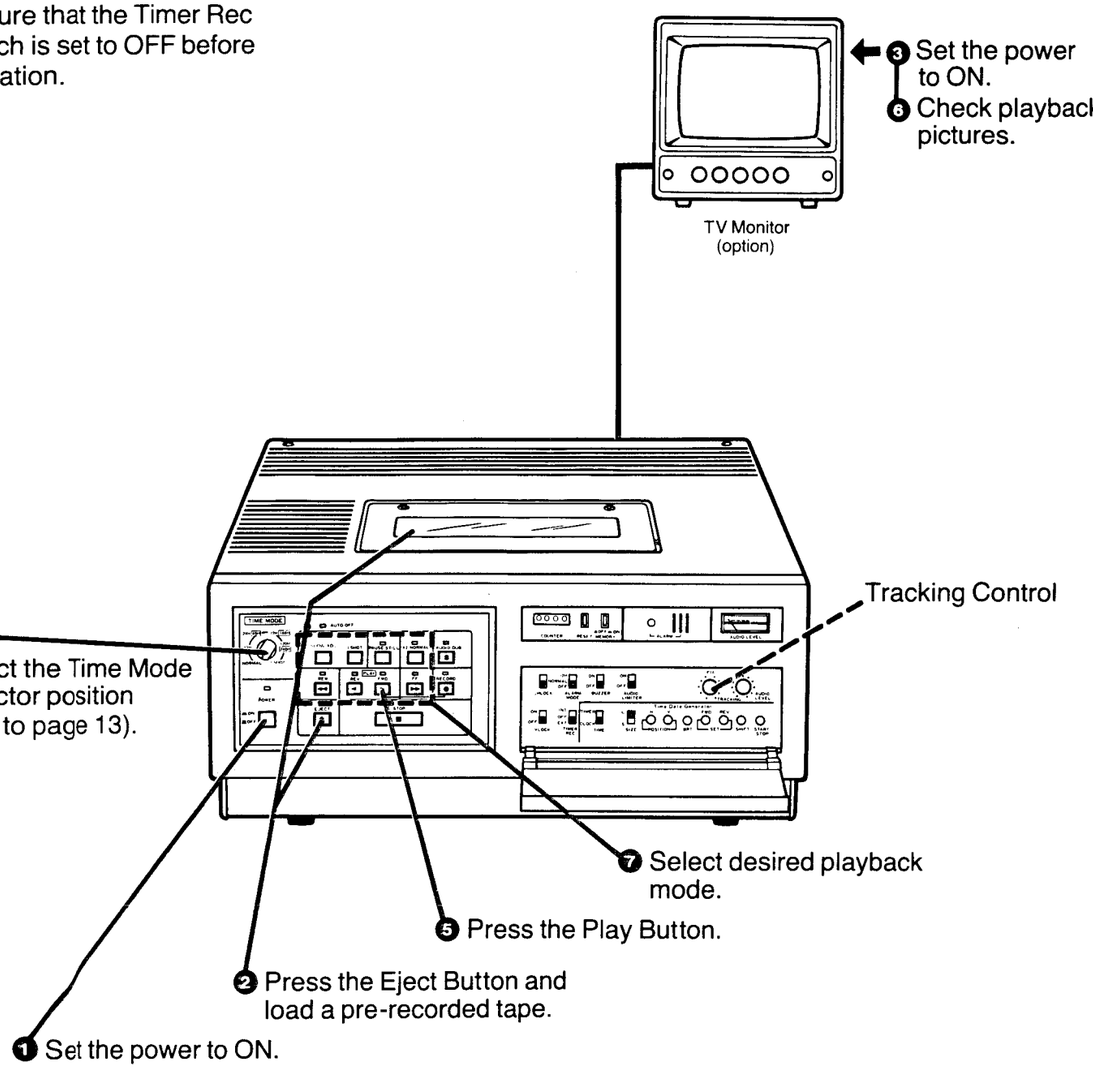
Step	Operation		Display on TV monitor
1		Set the recording start time on the timer to 21:30.	
2		Set the Timer Rec Switch to EXT.	

This now completes the timer operations. Turn to page 14 for the recording procedure. Recording will start at 21:30.

When the external timer is not used, set the Timer Rec Switch to the OFF position in order to avoid misoperation.

PLAYBACK

Be sure that the Timer Rec Switch is set to OFF before operation.


❸ Set the power to ON.
❻ Check playback pictures.
TV Monitor (option)
Tracking Control
❹ Select the Time Mode Selector position (turn to page 13).
❼ Select desired playback mode.
❺ Press the Play Button.
❷ Press the Eject Button and load a pre-recorded tape.
❶ Set the power to ON.

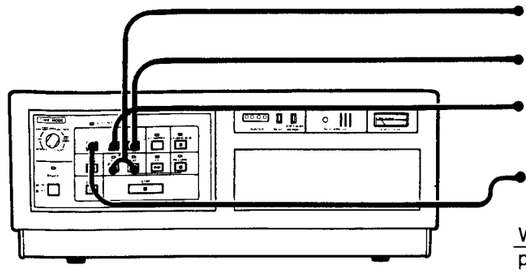
Notes:

- Reverse playback is released in about 5 minutes and normal playback is resumed when the Time Mode Selector is set to the 24-, 48-, 72-, 120-, 144- or 240-hour mode position.
- Still picture
  When the tape recorded in the NORMAL mode is played back in the still mode, some noise may appear on the picture played back. This is normal. If you wish to eliminate this noise from the picture, press and then hold the Slow Advance Button until noise disappears.
- Quick motion
  When the tape which is recorded in the 12H, 24H, 48H, 72H, 120H, 144H or 240H mode is played back in NORMAL mode, skew distortion or noise will appear on the TV monitor. In this case, use the 1/2H Lock Switch (for skew distortion) or the Tracking Control (for noise).

When a tape recorded in the slow-motion modes (more than 24-hour) is played back, interference bars will appear at the beginning of the playback portion in accordance with the volume of the tape winding, but this is not a malfunction.

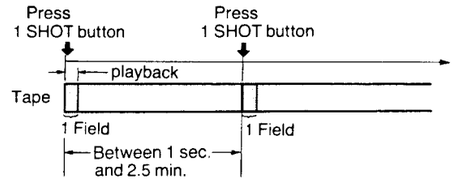
ENGLISH

Basic Procedure for 1 Shot Playback



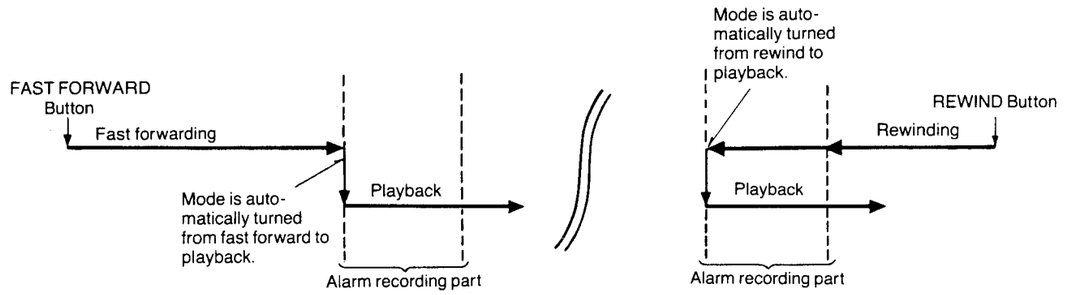
1. Press the PLAY Button or REVERSE Play Button.
2. Press the PAUSE/STILL Button.
3. Press the 1 SHOT Button.
   When NOISE appears on the still frame picture:
   Press and then hold the SLOW ADV Button until noise disappears.

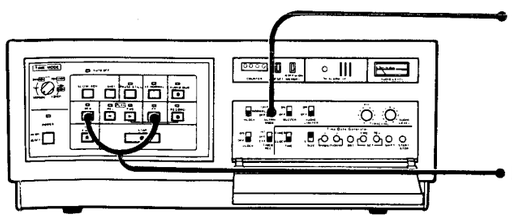
When the 1 Shot button is pressed once: The tape advances 1 field; the playback intervals are between 1 sec. and 2.5 min.



Note:
When the 1 shot playback interval reaches 2.5 minutes, the tape will automatically advance in order to protect the video heads.

Basic Procedure for Alarm Playback





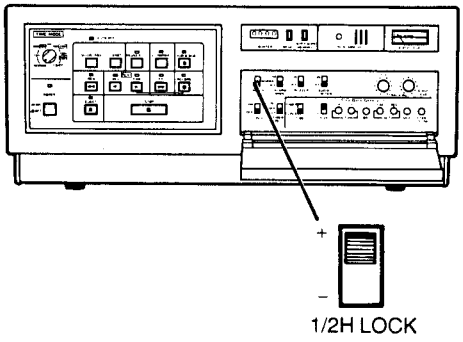
Set the ALARM RECORDING MODE SELECTOR to the NORMAL or 12H position.

Press the REWIND Button or FAST FORWARD Button to locate the part of the tape with the alarm recording. The part of the tape with the alarm recording is automatically played back from the beginning.

—If alarm signal is recorded at tape beginning, the automatic alarm recorded playback cannot be performed (unit stops at the beginning of the tape). In this case, press the Play Button to start playback.
—Always set the ALARM RECORDING MODE SELECTOR TO OFF for ordinary fast forward or rewind. If the alarm signal is recorded, playback will start and inhibit fast forward or rewind.

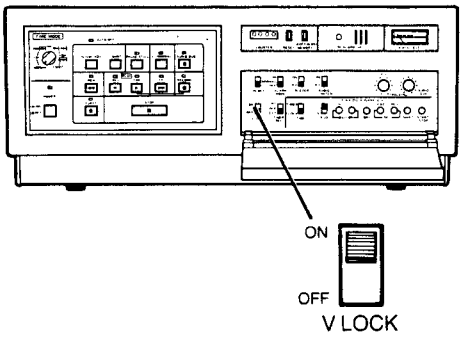
1/2H LOCK

Set the 1/2H Lock Switch to the opposite position—from the (−) position to the (+) position for example.



VERTICAL LOCK

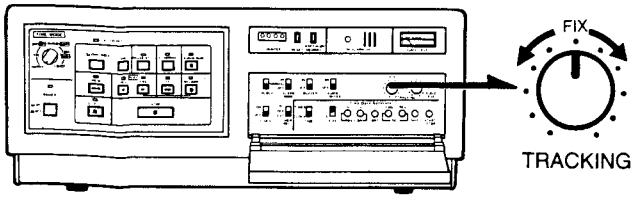
Set the Vertical Lock Switch to ON, to stop the vertical oscillation of the picture.



TRACKING

Tracking operation is functional only in the NORMAL playback mode. The Tracking Control is normally kept at the FIX position.

Adjust the Tracking Control to eliminate any noise that appears as in the photo on the left when a tape, which has been recorded on another time lapse video recorder is played back on this machine.



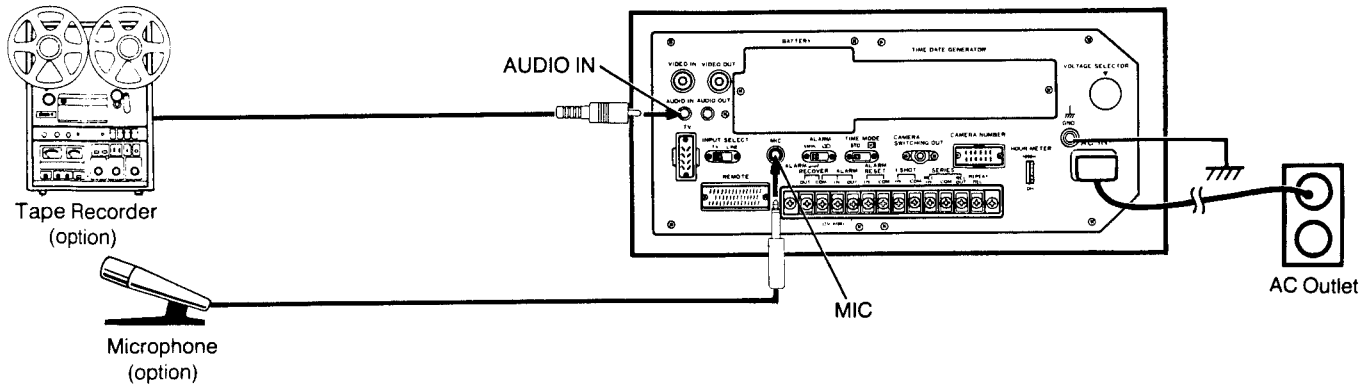
When the noise will appear on the TV monitor during double speed playback, Tracking Control can also be used.

Refer to the table below for the Tracking Control position.

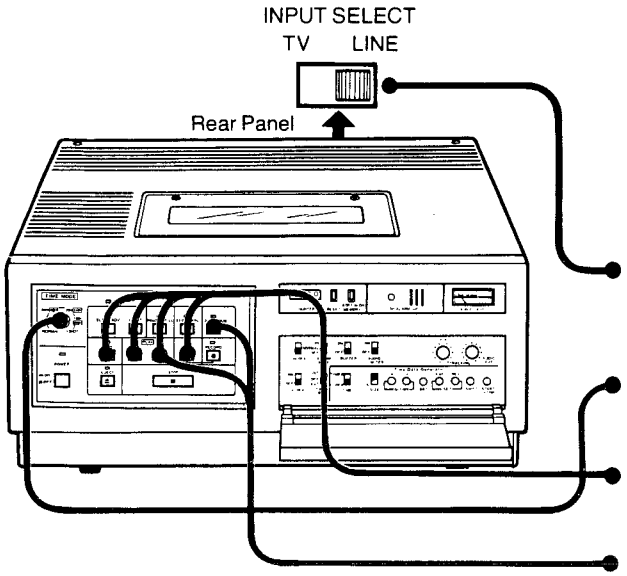
Rec / PB	NORMAL	12H ~ 240H	1 SHOT
NORMAL	FIX	Adjust	Adjust*
12H ~ 240H	Tracking control is non-functional in these modes. Set the Tracking Control to the FIX position.		
1SHOT			

*Adjust the noise by using the Slow Advance Button.

AUDIO DUBBING



When a microphone is connected, the sound for audio (line) in cannot be recorded since the microphone takes procedence.



—Switch on the TV monitor's power.

1. Switch on the power to the recorder.
2. Press the EJECT BUTTON to insert the prerecorded tape.
3. Set the Input Selector to LINE.
4. Adjust the recording level with the Audio Level Selector.
5. Set the TIME MODE SELECTOR to the sound recording range (NORMAL or 12H modes). Turn to page 13 for details.
6. Press the PLAY, FAST FORWARD OR REWIND Button to locate the place on the tape which is to be dubbed.
7. Press the AUDIO DUBBING Button and the PLAY Button together.
8. Press the STOP Button to terminate audio dubbing.

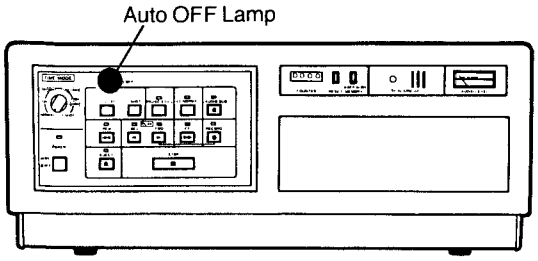
When using the Pause Button:

1. Press the PLAY Button and locate the place on the tape which is to be dubbed.
2. Press the PAUSE Button.
3. Press the AUDIO DUBBING Button.
4. Press the PAUSE Button again to release the pause function.
5. Audio dubbing now starts.

Note:
Do not change the setting of the Time Mode Selector ❸ during audio dubbing.

AUTO OFF LAMP AND VIDEO HEAD CLEANING

The unit comes with a moist detection circuit which is activated when the power is ON but some condensation or moisture is formed inside the unit.

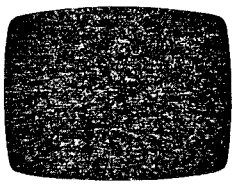


When the Auto OFF Lamp lights:
This indicates that moisture has formed inside the unit which then ceases to operate. Keep the unit powered and wait until the lamp goes off.
(Although a great deal depends on the ambient circumstances, the lamp will go off in a few hours' time at the longest.)
Moisture is formed under the same principle that condensation will form on window panes in a heated room, and it may be evident in the following circumstances:
—In a room where the heater has been switched on in winter.
—In a room where there is a high level of moisture or steam.
—In a warm room where the video recorder has been brought from a cold location.

When the Auto OFF Lamp blinks:
This means that something is wrong with the cylinder motor or photosensor. If the lamp still blinks when the power is switched off and then switched on again, the unit requires servicing.

HEAD CLEANING

Good Picture



Snowy Picture

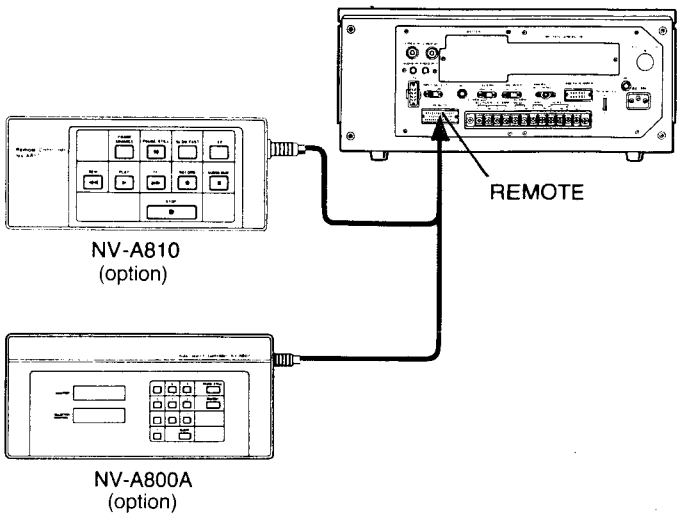
The video heads are the means by which the recorder places pictures on the tape during recording, and reads pictures from the tape during playback.
In the unlikely event that they become dirty enough to be clogged, no picture will be recorded or played back. This can easily be determined if, during playback of a known good tape, there is good sound, but no picture (picture is extremely snowy). If this is the case, have the recorder checked by qualified service personnel.

REMOTE/SEARCH CONTROL (Option)

The NV-A810 remote controller or the NV-A800A auto search controller can be connected to the rear panel Remote Control Connector on the unit.
—The NV-A810 remote controller has the following functions: recording, audio dubbing, fast forward, playback, rewind, pause/still, 1-shot advance, double speed playback and stop.
- It cannot be used for slow motion playback.
- Even if the double speed button is pressed, the lamp is not lit, but the operation can be performed.

—The NV-A800A auto search controller can play back a tape automatically simply by designating the programmes selection number.
- The unit does not work when the time lapse video recorder is set to the recording mode. Press the Stop Button first before operation.
- Set the ALARM RECORDING MODE SELECTOR to the OFF position in order to avoid misoperation.
- When the REV Button on the NV-8051 is pressed, tape will reverse but the NV-A800A cannot detect reverse playback and tape position display will count in forward direction.

For further details, refer to the Operating Instructions accompanying the NV-A810 remote controller and the NV-A800A auto search controller.



TROUBLESHOOTING

If you think that something is wrong with your unit, switch off the power immediately and check out the following points. If the trouble is still not rectified, disconnect the power plug from the power outlet and contact your dealer.

No power.	■ Is power plug connect to AC outlet properly?
No tape travel when function buttons are pressed.	■ Has Auto OFF Lamp come on? (Turn to page 24.)
No E-E system pictures or severe interference.	■ Has the TV monitor/video camera been adjusted properly? ■ Has the Input Selector been set correctly? ■ Have TV monitor, video camera and time lapse video recorder all been connected properly? ■ Is the TV monitor terminated correctly?
Intermittent noise on playback pictures.	■ When the tape recorded in NORMAL mode is played back in the NORMAL mode, noise will not appear on the TV monitor. Except that case, noise will appear. Use the Tracking Control. Turn to page 22.
Playback picture is rolling down on the TV monitor.	■ Set the Vertical Lock Switch to the ON position.
The upper part of the picture is distorted slightly to the right or left.	■ Set the 1/2H Lock Switch to the reverse position. (For instance, + position to − position.)
No recording or playback.	■ Has video cassette been inserted correctly? ■ Is video cassette tape position at the end of the tape?
No operation when Record Button is pressed.	■ Has video cassette tab been broken out? ■ Is the Auto OFF Lamp ON? (Turn to page 24.)
Recording starts when power is turned on.	■ Is the Timer Rec Switch set to EXT? It must be OFF position.
No operation when Play Button is pressed.	■ Is the Auto OFF Lamp ON? (Turn to page 24.)
No tape rewinding to tape start.	■ Has Memory Switch been set to the OFF position?
No operation when Rewind or Fast Forward Button is pressed.	■ Is the tape at tape start or tape end?
Playback starts when Rewind or Fast Forward Button is pressed.	■ Has Alarm Recording Mode Selector been set to the OFF position?
No repeat recording	■ Is the short circuit wiring disconnected from the REPEAT REC Connector on the rear panel?
Snow on playback picture.	■ Are video heads dirty? (Turn to page 24.) ■ Is the tape recorded on VHS Standard unit played back? This unit is designed exclusively for time lapse use.
No timer recording.	■ Is present time on time date generator correct? ■ When using built-in timer: Is Timer Rec Switch at INT? ■ When using external timer: Is Timer Rec Switch at EXT?
No series operation.	■ Has the equipment been connected properly? (Turn to page 13.) ■ Has the Power Switch of each of the time lapse video recorders been set to ON?

SPECIFICATIONS

NV-8051-E

Power Source:	AC 110/120/220/240 V (Selectable), 50-60 Hz
Power Consumption:	Approx. 65 watts
Recording System:	2 rotary heads, helical scanning
Tape Speed:	23.39 mm/s (NORMAL mode)
Tape Format:	Tape width 12.7 mm, high density tape
Recording/Playback Times:	3 hours with NV-E180 (NORMAL mode)
FF/REW Time:	Approx. 4.5 min. with NV-E180 (NORMAL mode)
Recording Time Modes:	NORMAL/12/24/48/72/120/144/240 hours and 1-shot mode

THIS UNIT IS DESIGNED EXCLUSIVELY FOR TIME LAPSE USE.
THE SPECIAL RECORDING SYSTEM WILL NOT ALLOW INTERCHANGING RECORDED PROGRAMMES WITH A STANDARD VHS UNIT.
DUE TO THE APPLICATION OF A TIME LAPSE RECORDER WE RECOMMEND THAT FOUR HOUR TAPE IS NOT USED WITH MACHINE.

VIDEO

TV System:	CCIR Standard (625 lines, 50 fields)
Modulation System:	Luminance: frequency modulation recording
Input:	TV (8 pins); 1.0 Vp-p, 75 ohms unbalanced Video Input (BNC); 1.0 Vp-p, 75 ohms unbalanced
Output:	TV (8 pins); 1.0 Vp-p, 75 ohms unbalanced Video Output (BNC); 1.0 Vp-p, 75 ohms unbalanced
Horizontal Resolution:	More than 330 lines for monochrome
Signal-to-Noise Ratio:	Better than 45 dB (Rohde & Schwarz noise meter)

AUDIO

Input	TV (8 pins); −20 dB, 100 kohms unbalanced Audio Input (phono); −20 dB, 100 kohms unbalanced Mic; −70 dB, 600 ohms unbalanced
Output:	TV (8 pins); 0 dB, 600 ohms unbalanced Audio Output (phono); −6 dB, 600 ohms unbalanced
Track:	1 track
Signal-to-Noise Ratio:	Better than 40 dB (NORMAL mode)
Frequency Response:	70 Hz to 10,000 Hz (NORMAL mode)

CONNECTORS

Alarm Signal Input:	Contact closure for alarm
Alarm Signal Output:	+12 V, 4.7 kohms
Alarm Recovery Output:	+5 V, 220 ohms
Alarm Reset Input:	+2~+15 V (min. current 2 mA)
1 Shot Signal Input:	Contact closure for alarm
Series Recording Input:	Contact closure for alarm
Series Recording Output:	Open collector (max. 20 mA)
Camera Switching Output:	+12 V, 5.6 kohms, negative Pulse Width: 2 msec. (NORMAL mode) 30 msec. (more than 12H mode)
Alarm Recording Time:	Approx. 5 min./tape end
Alarm Recording Speed:	NORMAL/12-hour modes

Operating Temperature:	5°–40°C
Operating Humidity:	35%–80%
Weight:	19 kg
Dimensions:	430 (W)×197 (H)×441 (D) mm
Accessories Supplied:	1 pc. AC Power Cord 1 pc. Protective Cover 1 pc. TV/VTR-Monitor Connection Cable
Optional Accessories:	1/2" video cassette tape; NV-E180 Approx. 258 m, 180 min. NV-E120 Approx. 174 m, 120 min. NV-E60 Approx. 88 m, 60 min. Auto Search Controller NV-A800A Remote Controller NV-A810 Video Camera Video Distributor Video Switcher
Display:	Day-month-year/hour-minute-second/recording mode (H)/number of alarms (A)/camera number (C)
Character Size:	Dual selection, large (14H) or small
Battery Back UP: (for time and date memory)	Three UM-3 (IEC Standard R6 "AA") dry batteries with an effective life of 1 year

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Remark:

This apparatus was produced to BS 800:1983.
Dieses Modell entspricht der EG-Vorschrift (für Funkstörungsschutz) 82/499/EG.
La Société PANASONIC-FRANCE, importateur du matériel MATSUSHITA-JAPON déclare que cet appareil est conforme aux prescriptions de la directive 76/889/C.E.E. modifiée par la directive 82/499/C.E.E.
Dit model is onderworpen aan de EEG-richtlijn (ter voorkoming van radio-interferentie) 82/499/EEG.
Denne model opfylder EF direktiv 82/499/EF (for forebyggelse af radiointerferens).
La Società PANASONIC ITALIA S.p.A., importatrice di questo prodotto, dichiara che questo apparecchio è conforme alle disposizioni della direttiva C.E.E./82/499 (D.M. 10 aprila 1984).

- Dieses Gerät ist nicht für den Betrieb mit einem separaten Tuner oder Fernsehgerät vorgesehen.

Wichtiger Hinweis:
Dieses Gerät ist ausschließlich für Schwarzweiß-Betrieb vorgesehen.
Der Aufnahme- und Wiedergabestandard wurde speziell für Langzeit-Video-Recorder entwickelt und entspricht nicht dem VHS-Standard. VHS-Vier-Stunden-Cassetten NICHT verwenden.
Mit diesem Videorecorder aufgezeichnete Cassetten können auch mit dem Langzeit-Video-Recorder NV-8050, jedoch nicht mit dem AG-6010 verwendet werden.

Überzeugen Sie sich vor Inbetriebnahme dieses Videorecorders, daß drei Batterien (IEC Standard R6 "AA") in der Zeitdaten Generatorbox an der Rückseite eingesetzt sind. Die Batterien dienen zur Reserve-Stromversorgung bei einem Stromausfall.

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DEUTSCH

Bei Aufnahme und Wiedergabe von CCIR-Signalen liefert der Langzeit-Video-Recorder NV-8051 optimale Bildqualität, wenn Kameras mit 2:1 Zeilensprung-Synchronisation verwendet werden. Bei Betrieb von Kameras ohne 2:1 Zeilensprung-Synchronisation in den Betriebsarten 12, 24, 48, 72, 120, 144 und 240 H oder "1-Shot" (Einzelbild) können Bildverzerrungen auftreten.

Wichtiger Hinweise:
Dieses Gerät wird ausschließlich für Schwarzweiß-Betrieb vorgesehen.

KURZBESCHREIBUNG

1. **Aufnahme und Wiedergabe in einer Betriebsart von bis zu 240 Stunden und in Einzelbildbetrieb**
   Sie können in neun verschiedenen Betriebsarten aufnehmen und wiedergeben, wie z. B. Langzeit-Betriebsarten von 24, 48, 72, 120 und 240 Stunden sowie Einzelbildbetriebsart plus 2- und 12-Stunden-Betriebsarten für Ton-Aufnahme.
2. **Hohe Auflösung von 330 in der mittleren Zeile be: Schwarzweißbetrieb**
   Eine hohe Auflösung von 330 Linien läßt sich für ein einwandfreies Bild erzielen, wodurch auch das Standbild an Schärfe gewinnt.
3. **Multifunktions-Aufnahmesystem**
   Dieser Videorecorder ist auf höchstflexiblen Einsatz hin konzipiert. Deshalb können Sie wählen aus timergesteuerter Aufnahme, Wiederholautomatikaufnahme, Serienaufnahme mit Mehrfach-Einheiten, Alarm-Aufnahme und Einzelbildaufnahme.
4. **Wiedergabefunktionen**
   Sie können sich schnell einen Überblick über den Bandinhalt verschaffen, indem Sie von solchen Wiedergabefunktionen Gebrauch machen wie Bildsuchlauf in Vorwärts/Rückwärtsrichtung mit dem Zweifachen der normalen Abspielgeschwindigkeit, Vorwärts/Rückwärts-Wiedergabe in allen Zeitbetriebsarten, Vorwärts/Rückwärts-Halbbildschaltung und automatische Alarm-Wiedergabe.
5. **Wiederholungsaufnahme**
   Dieses Gerät kann wiederholt vom Bandanfang bis zum Bandende aufnehmen.
6. **Sicherheitsfunktion**
   Um langzeitigen Dauerbetrieb wie bei Überwachung und Kontrolle sicherzustellen, ist das Gerät mit sicherheitsfunktionen wie Aufnahmemonitordisplay zur Erfassung irgendwelcher Ungewöhnlichkeiten, Stromausfall-Rückstellschaltung und Warnanzeige zur Erfassung von Störungen beim Videorecorder ausgestattet.
7. **Datum-/Zeitgenerator**
   Datum, Zeit, Zeitbetriebsart, Alarmnummer und Kameranummer können überlagert werden, damit die Überwachung und Kontrolle so effektiv wie möglich wird.
8. **Systemerweiterung**
   Außer Video/Audio-Ein/Ausgangsanschlüssen stehen ein 8-Pol-Anschluß für die Verbindung mit dem Monitor, Kamera-Schaltanschluß für Verbindung mit dem Kamera-Umschalter, Kameranummernanschluß und ein 34-Pol-Anschluß zur Verbindung der Fernbedienung zur Verfügung, so daß der Aufbau eines kompletten Systems keine Mühe bereitet.
9. **Betriebsstundenzähler**
   Als Orientierungshilfe bei der Wartung ist ein Betriebsstundenzähler eingebaut.